IN THE SPECIFICATION:

Please replace paragraph 1 at page 10 continuing onto page 11, with the following rewritten paragraph:

To attain the aforementioned objects, ~~in a learning/thinking machine claimed in claim 1,~~ a learning /thinking machine includes the following means. That is, a learning/thinking machine includes a knowledge based composed of:

(1) a means for inclusively collecting information:

(2) a means for extracting a semantic relation from the collected information in accordance with a plurality of analytical rules;

(3) a means for storing therein semantic contents as a knowledge structured so as to sufficiently express said semantic contents based on the extracted semantic relation, a learning/thinking machine based on a structured knowledge comprising:

(4) a means for generating new information by predetermined inference in response to an inquiry or request such that a knowledge structured based on the semantic relation may have new semantic content and relation;

(5) a means for evaluating generated new information;

(6) a means for judging sequencing of the evaluated result;

(7) a means for determining an optima solution based on a judged result;

(8) an input means for receiving an inquiry or request from the outside; and

(9) a verifying means for verifying the inquiry or request from the outside and the knowledge base, wherein if it is determined by the verifying means that the inquiry or request are completely coincident with the knowledge base, then understanding of such coincidence is transmitted to a central unit and if it is determined that the inquiry or request from the outside are

00302082

partly coincident with the knowledge base, then information is generated by predetermined inference such that the knowledge structured based on the semantic relation may have new semantic relation and content.

Please replace paragraph 1 at page 11 continuing onto page 12, with the following rewritten paragraph:

A learning/thinking method according the present invention ~~claimed in claim 2~~ is comprised of:

(1) a knowledge input step for inputting inclusively collected data, information and knowledge;

(2) a knowledge structuring step for analyzing information from said inputted data, information and knowledge, extracting a semantic relation in accordance with a plurality of rules and storing structured knowledge based on the extracted semantic relation;

(3) an information generating step for generating new information by predetermined inference so that the knowledge structured based on the semantic relation has new semantic content and relation;

(4) an evaluation judging step for evaluating the information generated new knowledge by verifying the information generated result and the knowledge base;

(5) a knowledge generating step for accumulating the evaluated/judged result and new information generated knowledge in the knowledge base to increase knowledge; and

(6) an optimal solution deciding step for storing the evaluated/judged result and new information generated knowledge in the knowledge base to increase a knowledge;

the information generating step comprising:

(7) a related node retrieving step for retrieving only a unit in which a related node is stored;

(8) a relating link retrieving step for retrieving only a unit in which a relating link is stored; and

(9) a step for executing inference by using any of at least analogical reasoning, inductive inference, abduction or association based on retrieved result of said related node retrieving step or said relating link retrieving step.

Please replace paragraph 1 at page 12 continuing onto page 13, with the following rewritten paragraph:

According to a learning/thinking method ~~according to the present invention claimed in claim 3, in a learning/thinking method based on a structured knowledge according to claim 2~~, the evaluating and judging step comprises:

(1) a step for evaluating new information generated knowledge item by item with reference to the knowledge that has already been stored the knowledge base;

(2) a step for determining whether or not the new generated knowledge satisfies an inquiry request, setting the knowledge as a nominated solution if the knowledge satisfies the request and searching and evaluating other results item by item if the knowledge does not satisfy the request;

(3) a step for sequencing the nominated knowledge with reference to the knowledge base; and

(4) a step for extracting/deciding nominated knowledge whose target necessary condition is optimum from sequenced nominated knowledge.

00302082

Please replace paragraph 1 at page 13 continuing onto page 14, with the following rewritten paragraph:

According to a learning/thinking method based on a structured knowledge according to the present invention ~~claimed in claim 4, a learning/thinking method based on a structured knowledge is characterized in that~~ the knowledge generating step comprises:

(1) a step for determining whether or not new knowledge information generated at the information generating step and which is generated at the evaluating/deciding step as an optimal solution is increased as a new node;

(2) a step for storing the new node in a unit integration memory if it is determined that the new information is increased as the new node;

(3) a step for determining the generated new knowledge is increased as a link regardless of the increase of the node;

and

(4) a step for storing the new link in the unit integration memory if it is determined that the generated new knowledge is increased as the new link.

Please replace paragraph 1 at page 15 continuing onto page 17, with the following rewritten paragraph:

To attain this object, ~~in a computer system claimed in claim 5,~~ a computer system in which a central management computer and a plurality of cell computers are coupled so as to communicate with each other, a computer system is characterized in that:

(1) the central management computer can store all addresses and names of a plurality of cell computer before it is being operated, the central management computer can input questions

to all of a plurality of computer and the central management computer can output answers to questions;

(2) all of the cell computers stores therein a knowledge structured so as to indicate each knowledge and its connection destination knowledge and all of the cell computers can access information of a connection destination of a semantic relation of each knowledge;

(3) when a question is inputted, the question is transmitted from the central management computer to a plurality of cell computers, as a presupposing operation, the cell computer is changed to a processing target state or an unsuitable state based on connection information of a semantic relation relative to the question of knowledge each of a plurality of cell computers has; and

a cell computer having no semantic relation to the question is placed in the unsuitable state and transmits information indicative of the unsuitable state to the central management computer and the relating cell computer, only the cell computer having a connection of a semantic relation is placed in the processing target state, only the cell computer in the processing target state continues processing, the central management computer analyzes an answer from the cell computer in the processing target state and understands meaning in response to a question to thereby generate new information and (5) the central management computer converts the generated new information into an output form corresponding to the question and outputs the converted information as an answer.

Please replace paragraph 1 at page 17 continuing onto page 18, with the following rewritten paragraph:

~~According to a computer system claimed in claim 6, in a computer system according to claim 5, a~~ <u>The</u> computer system is characterized in that:

the central management computer comprises:

(1) a request condition analyzing unit for analyzing a condition of an inputted question when a question is inputted to the input unit;

(2) a request condition processing target cell detecting unit for transmitting a request condition to all cell computers based on the analyzed request condition, receiving a reply of the unsuitable state from an unsuitable cell computer and detecting a processing target cell computer from all of the cell computers except the unsuitable cell computer in response to the request condition;

(3) a retrieval transmitting and receiving unit for continuing to retrieve only the detected processing target cell computer, receiving a retrieval answer from the processing target cell computer and analyzing a retrieved result based on the received retrieval answer;

(4) a semantic understanding/information generating unit for executing semantic understanding and information generation from the analyzed retrieved result to generate new information;

(5) an output information converting unit for converting generated new information into a requested output form;

(6) a cell connection destination address memory unit for storing therein an address of a connection destination cell computer having a semantic connection based on the generated new information in such a manner that the address can be updated sequentially; and

00302082

(7) an answer output unit for outputting the generated new information in the requested output form.

Please replace paragraph 1 at page 18 continuing onto page 19, with the following rewritten paragraph:

~~According to a computer system claimed in claim 7, in a computer system according to claim 5, a~~ The computer system is <u>further</u> characterized in that:

a plurality of cell computers comprises:

(1) a request condition processing target judging unit for determining by using decision information indicative of the presence or absence of a connection destination cell computer whether or not its own cell computer becomes a processing target in response to the request condition simultaneously transmitted from the central management computer to all cell computers;

(2) an unsuitable replay/connection destination cell communicating unit for returning an information indicative of an unsuitable state to the central management computer if its own cell computer is unsuitable for the request condition and transmitting information indicative of the processing target state to a connection destination cell computer if its own cell computer becomes a processing target in response to the request condition;

(3) a retrieval receiving unit for receiving retrieval information from the central management computer if its own cell computer becomes the processing target in response to the request condition;

(4) a connection destination judging unit for retrieving other connection destination cell computer which its own cell computer has information connection in response to the request condition and determining by using information of the connection destination cell computer

whether or not retrieval based on retrieval information can be executed at every request condition;

(5) a retrieval answer unit for returning an answer of the executed retrieval to said central management computer;

(6) a knowledge memory unit for storing knowledge obtained based on the retrieval information and the answer of retrieval such that the knowledge can be updated sequentially; and

(7) a connection destination cell memory unit for storing a connection destination cell computer corresponding to the obtained knowledge such that the connection destination cell computer can be updated sequentially.

Please replace paragraph 1 at page 19 continuing onto page 20, with the following rewritten paragraph:

~~According to a computer system claimed in claim 8, in a computer system according to claim 7, a~~ The computer system is <u>further</u> characterized in that:

the connection destination judging unit comprises:

(1) a step number N retrieving means for retrieving a path in which said request condition has a structure of a step number N (natural number);

(2) a tree-like path retrieving means for retrieving a path in which the request condition has a tree-like structure; and

(3) a loop-like path retrieving means for retrieving a path in which the request condition has a loop-like path to thereby judge a connection corresponding to the request condition structure.

00302082

Please replace paragraph 1 at page 20 continuing onto page 21, with the following rewritten paragraph:

~~According to an~~ <u>An</u> information generating method ~~claimed in claim 9, in an information generating method~~ using a computer system in which a central management computer and a plurality of cell computers are coupled so as to communicate with each other in which (1) the central management computer stores therein only addresses of a plurality of cell computers before being operated, the central management computer can input a question to a plurality of cell computer and can output an answer to a question;

(2) each of a plurality of cell computers stores therein each knowledge structured in such a manner as to indicate knowledge and knowledge of its connection destination and also stores therein connection destination information of a semantic relation of each knowledge, an information generating method comprises:

(3) a step in which a question is transmitted from said central management computer to all of a plurality of cell computers when a question is inputted;

(4) a step for changing the state into a processing target state or unsuitable state based upon connection information of a semantic relation relative to the question of a knowledge of each of a plurality of cell computers as presupposing operation;

(5) a step in which a cell computer having no connection of a semantic relation to said question is placed in the unsuitable state to return information indicative of the unsuitable state to the central management computer and only a cell computer having a connection of a semantic relation is placed in the processing target state to return an answer to the central management computer;

(6) a step in which the central management computer continues to output a question to only a cell computer in the processing target state; and

(7) a step for generating new information by analyzing and understanding an answer from the cell computer in the processing target state, converting generated new information into an output form corresponding to a question and outputting converted output as an answer.

Please replace paragraph 1 at page 21 continuing onto page 23, with the following rewritten paragraph:

~~According to an information generating method claimed in claim 10, in an information generating method according to claim 9, an~~ The information generating method is characterized in that:

the central management computer including:

(1) a step for analyzing a condition of an inputted question by a request condition analyzing unit when a question is inputted to a question input unit;

(2) a step for transmitting the request condition to all cell computers by a request condition processing target cell detecting unit based on the analyzed request condition, receiving an answer indicative of the unsuitable state from an unsuitable cell computer and detecting a cell computer, which becomes a processing target in response to the request condition, from all cell computers excepting the unsuitable cell computer;

(3) a step for continuing to effect the later retrieving operation on the detected processing target cell computer by a retrieval transmitting and receiving unit to receive a retrieval answer from the processing target cell computer;

a step for analyzing the retrieved result by a retrieved result analyzing unit based on the received detected retrieval answer;

(4) a step for understanding meaning and generating information from said analyzed

result by the semantic understanding/information generating unit;

(5) a step for converting said generated new information into a requested output form by

the output information converting unit;

(6) a step for storing an address of a connection destination cell computer having a

semantic connection based on the generated new information such that the address can be

updated sequentially; and

(7) a step for outputting the generated new information in the requested output form by

the answer output unit.

Please replace paragraph 1 at page 23 continuing onto page 24, with the following

rewritten paragraph:

~~According to an information processing method claimed in claim 11, in an information~~

~~processing method according to claim 9, an~~ The information generation method is <u>further</u>

characterized in that:

a plurality of cell computers includes:

(1) a step in which it is determined at a request condition processing target judging unit

by using judgment information indicative of presence or absence of a connection destination cell

computer in response to request conditions simultaneously transmitted from the central

management computer to all cell computers whether or not its own cell computer becomes a

processing target;

(2) a step in which an unsuitable state is returned to the central management computer if

its own cell computer is unsuitable for the request condition and in which the processing target

state is transmitted to the connection destination cell computer by the unsuitable

00302082

reply/connection destination communicating unit if its own cell computer becomes a processing target for the request condition;

(3) a step for receiving retrieval information from the central management computer by a retrieval receiving portion if its own cell computer become a processing target relative to the request condition;

(4) a step for retrieving other connection destination cell computer which its own cell computer has an information connection in response to the request condition and in which it is determined at a connection destination judging unit by using information of the connection destination cell computer whether or not the retrieval based on the retrieval information can be executed for every request condition;

(5) a step for returning the retrieval answer to the central management computer by a retrieval answer unit;

(6) a step for storing the retrieval information and a knowledge obtained based on an answer of a retrieval in a knowledge memory unit such that they can be updated sequentially; and

(7) a step for storing a connection destination cell computer corresponding to the obtained knowledge in a connection destination cell memory unit such that it can be updated sequentially.

Please replace paragraph 1 at page 24 continuing onto page 25, with the following rewritten paragraph:

~~According to an information processing method claimed in claim 12, in an information generating method according to claim 11, an~~ The information processing method is additionally characterized in that:

the decision step of the connection destination judging unit includes:

(1) a step for determining whether or not there is a connection destination cell computer at a node number N including its own cell computer in an operation for searching a path having a step number N (natural number) in a connection decision having a request condition structure;

(2) a step for determining based on information indicative of the fact that there is a connection destination cell computer at a node number N that cell computer including its own cell computer having the node number N are placed in the processing target state and in which information is transmitted through the unsuitable reply/connection destination cell communicating unit to the central management computer such that these cell computers are to be moved to the processing target state; and

(3) a step in which it is determined based on information indicative of the fact that there is no connection destination cell computer at the node number N that cell computer including its own cell computer having other node number are placed in the unsuitable state, information is transmitted through the unsuitable reply/connection destination cell communicating unit to the central management computer such that these cell computers are to be moved to the unsuitable state and in which information indicative of the unsuitable state is transmitted to the central management computer.

Please replace paragraph 1 at page 25 continuing onto page 27, with the following rewritten paragraph:

~~According to an information processing method claimed in claim 13, in an information generating method according to claim 11, an~~ The information generating method is _further_ characterized in that:

the decision step of said connection destination judging unit includes:

00302082

(1) a step in which when a tree-like path including its own cell computer is retrieved in the operation for retrieving a tree-like path in a connection decision based on a request condition structure, it is determined whether or not a tree-like connection destination cell computer including its own cell computer is placed at the end, it is sequentially determined that cell computers at the end are placed at the end so that it is determined that all of tree-like connection destination cell computer are placed at the end;

(2) a step in which it is determined based on information indicative of the fact that all tree-like connection destination cell computer are placed at the end that cell computers at the end are placed in the processing target state so that it is determined that all tree-like connection destination cell computers are placed at the processing target state and that information is transmitted through the unsuitable reply/connection destination cell communicating unit to the central management computer such that these cell computers are to be moved to the processing target state; and

(4) (3) a step in which it is determined that all remaining loop-like connection destination cell computers except tree-like connection destination cell computers in the processing target state are placed in the unsuitable state so that information is transmitted through the unsuitable reply/connection destination cell communicating unit to the central management computer such that these computers are to be moved to the unsuitable state and that information indicative of the unsuitable state is transmitted to the central management computer.

Please replace paragraph 1 at page 27 continuing onto page 29, with the following rewritten paragraph:

~~According to an information processing method claimed in claim 14, in an information generating method according to claim 11, an~~ The information generating method is still further characterized in that:

the decision step of the connection destination judging unit includes:

(1) a step in which when loop-like connection destination cell computer including its own cell computer are retrieved in the operation for retrieving a loop-like path in the connection decision based on the request condition structure, it is determined whether or not tree-like connection destination cell computers including its own cell computer are placed at the end, it is determined that connection destination cell computers at the end also are not belonging to a loop so that it is determined that all tree-like connection destination cell computers also are not belonging to the loop;

(2) a step in which it is determined based on information indicative of the fact that all tree-like connection destination cell computers are placed at the end that cell computers at the end are placed in the unsuitable state;

(3) it is determined that all tree-like connection destination cell computer are placed in the unsuitable state, information is transmitted through the unsuitable reply/connection destination cell communicating unit to the central management computer such that these cell computers are to be moved to the unsuitable state and in which information indicative of the unsuitable state is transmitted to the central management computer;

(4) a step for determining whether or not there is a cell computer including its own cell computer at a node number N (natural number);

00302082

a step in which tree-like connection destination cell computer in the unsuitable state are removed, it is determined by further decision of the node number N that remaining loop-like connection destination cell computer having the node number N are placed at the processing target state and information is transmitted through the unsuitable reply/connection destination cell communicating unit to said central management computer so that these cell computers are to be moved to the processing target state; and

(5) a step in which it is determined based on information indicative of the fact that there is no connection destination cell computer at the node number N that cell computers including its own cell computer having other node number are placed in the unsuitable state so that information is transmitted through the unsuitable reply/connection destination cell communicating unit to the central management computer such that these cell computers are to be moved to the unsuitable state and

(6) a step in which information indicative of the unsuitable state is transmitted to the central management computer.